Weijia Wu

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Education

University of Michigan **May 2025**
B.S.E. in Computer Engineering, Minor in Mathematics *Ann Arbor, MI*
GPA: 3.92

Relevant Coursework: Data Structures and Algorithms, Object Oriented Programming, Computer Architecture, Electronic Circuits, Logic Design, Discrete Math, Robotic Mechanisms, Linear Algebra, Differential Equations, Multivariable Calculus

Awards/Leadership: Dean's List, Michigan Community Student Leader, Richard Earhart Scholar, National Merit Finalist

Experience

University of Arkansas **June 2021 – January 2022**
Software Development Intern *Fayetteville, AR*

- Enhanced machine learning algorithms with the Department of Computer Science on a NSF-sponsored project for detecting cyber-security threats in Twitter tweets by using Python, NumPy, Pandas, Keras, and other technologies, effectively evaluating potential cyber-security threats with a reliability of 94%
- Implemented one-hot encoding to optimize both memory usage and run time by over 50%, enabling the program to process a larger amount of data while saving 5 minutes per test

Projects

Personal Website V2 (https://weijiawu.net/) | *React, TailwindCSS, Javascript* **May 2023**

- Designed and programmed a comprehensive portfolio website, effectively showcasing personal projects and information
- Upgraded personal website using React components and TailwindCSS templates, harnessing their efficiency to create an intuitive UI/UX design and revitalize outdated website with new animations and pages (previous version on Github)

Traffic Light Controller | *Intel Quartus Prime, ModelSim* **April 2023**

- Engineered comprehensive traffic light controller using Quartus Prime for a 4-way crossroad scenario on Altera DE2-115 Board, including streamlined handling of left and right turns and a timing system for light color change efficiency
- Developed a sophisticated state machine in Verilog to coordinate the controller's operations, optimizing traffic light configurations based on real-time car inputs so that no car waits for more than 15 seconds
- Conducted rigorous testing in ModelSim, simulating all possible states to identify timing violations and maximize quality assurance. Incorporated additional safety state to mitigate timing glitches and ensure expected outcome

Piazza Post Classifier | *C++, Machine Learning, Objected Oriented Programming* **March 2023**

- Programmed Piazza post classifier using C++, natural language processing, and supervised machine learning to categorize over 400 posts into their respective content category so that students could more easily find topics
- Applied a Multi-Variate Bernoulli Naive Bayes Classifier and advanced OOP concepts, such as classes, virtual functions, and polymorphism to create a robust and efficient structure, achieving a successful prediction rate of over 85%

Last Stretch Food Delivery Robot | *Python, Arduino, AutoCAD* **November 2022**

- Conceptualized and constructed an autonomous navigational robot using Python and Arduino, capable of reliably navigating and delivering food to designated rooms on a simulated dorm floor with 52 different drop off locations
- Empowered the robot to autonomously identify and detect human presence by integrating a Python image recognition algorithm onto an Arduino platform, thereby enabling obstacle detection and avoidance to eliminate collisions
- Assembled a path tracking system utilizing floor-facing color sensors, complemented by the 3D printing of components for a precision dropping mechanism, reducing average time away from charging station by 2 minutes for each delivery run

Extracurricular

Michigan Hackers **September 2022 – Present**

- Resolved 10 bugs and issues on the latest version of open-source Home Assistant relating to scalable design, compiler problems, and object-oriented programming with the open-source team to fix 3 non-operational lighting features

UM Autonomous Robotic Vehicle **September 2022 – Present**

- Pioneered edge-detection algorithms for path mapping and enhanced an image processing program with the computer vision team to intelligently sort and eliminate redundant video frames, improving algorithm efficiency by over 80%

Skills

Languages: C++, Python, MATLAB, Verilog, JavaScript, HTML/CSS, SQL, Linux
Technologies/Frameworks: VS Code, React, TailwindCSS, Git, NPM, Node.js, Ubuntu
Other Interests: Professional Piano Player (ARCT), SAT Club Founder, Local 5K Runs Volunteer, Varsity Swimmer